

## Multiple Oil Globules (listed by size)

Oct 3, 1994

Measurements for egg chorion and oil globule diameters were made to the nearest 0.01 millimeter. Sizes within parentheses represent minimum and maximum values observed.

*Symphurus* spp. .57-.64 (.54-.66); og no. 7.4 (5-11); og diam .06 (.05-.07).

**Unk #99:** .62 (.59-.70); og no. (7-14); og diam (.04-.08); no pigm at 5/8~; light dors pigm on embryo and melan in dors and anal finfolds at full~; membrane may have reddish tint.

*Trinectes maculatus* (.70-.79); og no. (15-20); og diam [no info].

**Unk #95:** .74 (.72-.88); og no. (15-20); og diam [no info]; punct melan scatt dors and lat snout to tailtip; scatt on yolk.

**Unk #193:** (.77); og no. (approx 35); og diam [no info]; pigm info lacking.

**Unk #186:** (.79); og no. [no info]; og diam [no info]; "lots of pigm on embryo".

**Unk #227:** (.93-.96); og no. (15-20); og diam (.04-.07); One vent. Melan at 9/10 BL.

*Prionotus* sp. .93-1.08(.87-1.16); og no. 11-15(6-25); og diam .08-.13(.04-.18) chorion often with red tint; dend (filmy and faint) melan on embryo, yolk, and patches in dors and anal finfold.

**Unk #198:** (1.10); og no. [no info]; og diam [no info]; wide perivitelline space; egg membrane with internal pustules; punct melan on dors, a few vent; sparsely scatt on yolk.

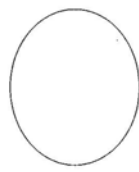
*Sarda sarda* 1.19-1.26 (1.18-1.37); og no. (2-10); og diam (max=.27); perhaps og is single but broken; punct melan.

**Unk #181:** (1.40-1.50); og no. [no info]; og diam [no info]; pigm info lacking.

**Unk #213:** 1.47 (1.42-1.52); og no. (10-15); og diam (.10-.15); darkly pigm areas on head and striking band at about 2/3 BL; yolk densely pigm; pect buds pigm. (Soleidae?)

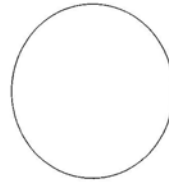
**Unk #86:** (2.70); og no. [no info]; og diam (approx .05); no pigmentation (?).

*Anchoa mitchilli*



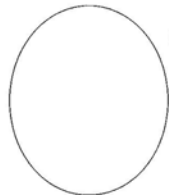
Hildebrand, 1963.

0.75 x 0.62,  
ratio = 0.82



Jones, et al., 1978.

0.78 x 0.84,  
ratio = 0.92

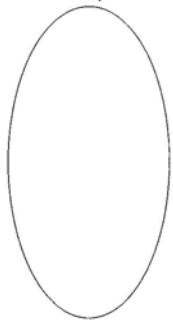


Sandy Hook

0.76 x 0.92,  
ratio = 0.84

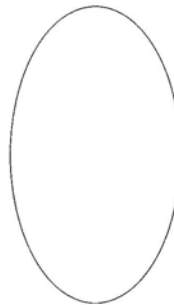
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*Anchoa hepsetus*



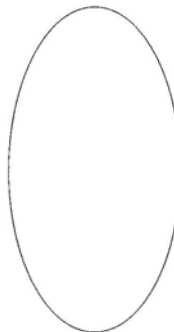
Hildebrand, 1963.

0.78 x 1.50,  
ratio = 0.52



Jones, et al. 1978.

0.82 x 1.42,  
ratio = 0.57

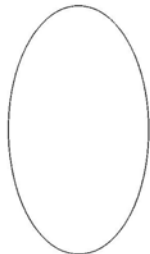


Sandy Hook

0.82 x 1.56,  
ratio = 0.53

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*Engraulis eurystole*



Hildebrand, 1963.

0.68 x 1.20,  
ratio = 0.56



Jones, et al. 1978.

0.65 x 1.14,  
ratio = 0.57

Figure 1. Comparison of anchovy egg shapes for *Anchoa mitchilli*, *Anchoa hepsetus* and *Engraulis eurostole*.

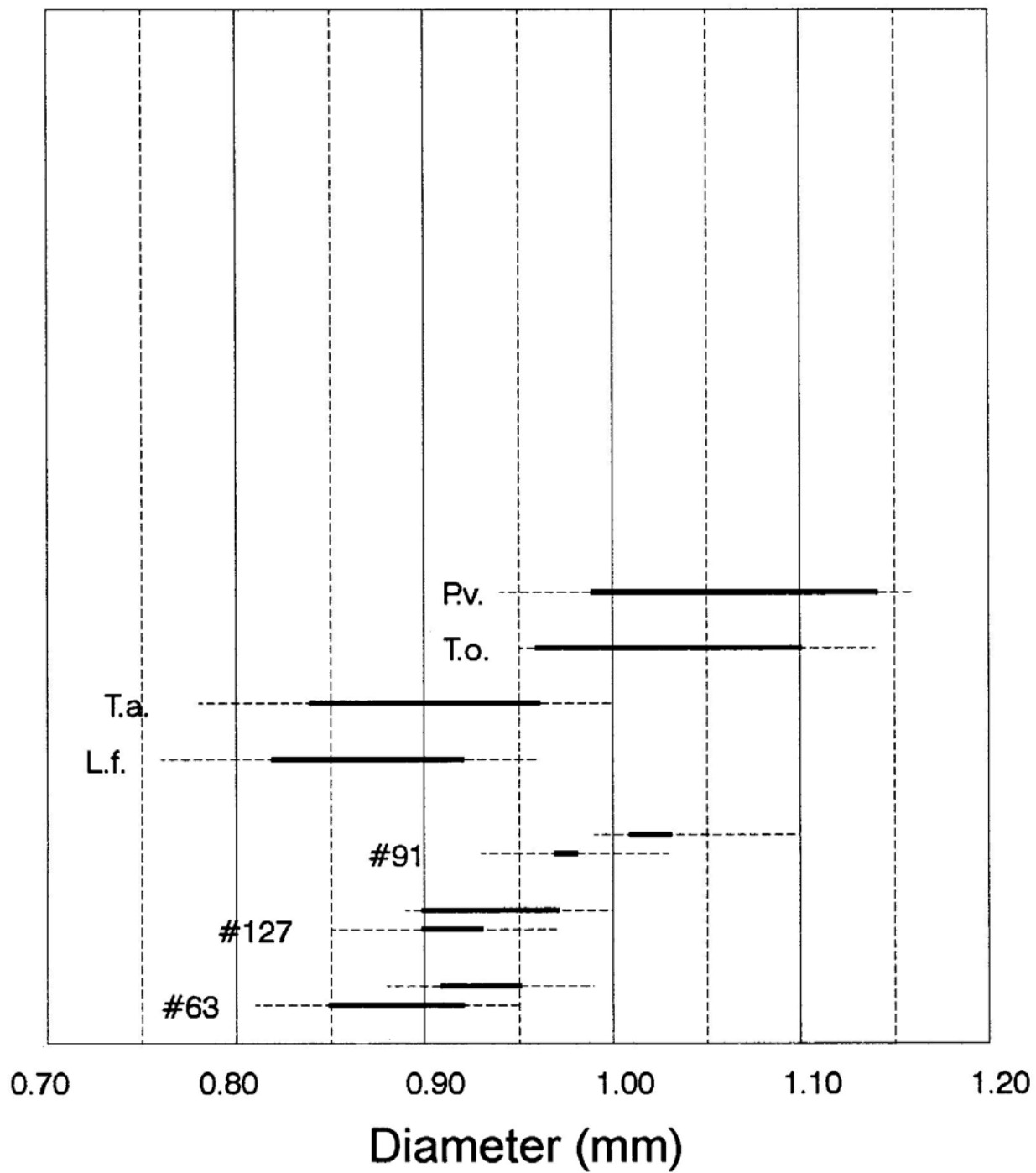


Figure 2. Comparisons of egg diameters for *Pollachius virens*, *Tautogolabrus onitis*, *Tautogolabrus adspersus*, *Limanda ferruginea*, Unknown #91, Unknown #127 and Unknown #63.

**Symphurus spp.** Taxon Code: 183 050 700

Mar 31, 1993

[tentative identification: *S. plagiusa*, see Olney and Grant 1976]

Shape and size: Spherical; .57-.64 (.54-.66)

Oil g: Multiple;  
no. per egg; 7.4 (5-11)  
diameter; .06 (.05-.07)

Egg membrane: Single, smooth, clear and colorless

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: MAB: Feb, May-Sep

Pigmentation and form:

### MIDDLE

**la-Mid:** A few tiny, punct and faint melan scatt on dors of embryo from behind eyes to about 1/2 to 2/3 BL.  
None on yolk.

### LATE

**ea-Late, 9/16~:** Tiny punct and faint melan scatt on dorsum of embryo from behind eyes to 2/3 to 7/8 BL,  
increasing in density and coverage with development. None on yolk or associated with oil g's.

**9/16-5/8~, tail twisting:** Tiny punct melan (slightly darker now) scatt dors and dors-lat from m-brain to 9/10 BL, most dense on middle 1/2 of body. None on yolk or associated with oil g's.

*Symphurus spp.*, observed sizes

Summary: egg diameter: .57-.64 (.54-.66)  
oil globule number per egg: 7.4 (5-11)  
oil globule diam: .06 (.05-.07)

Area	Mon	Obs <sup>1</sup>	Egg diameter				Obs <sup>2</sup>	Oil globule no.				Obs <sup>3</sup>	Oil globule diam				Cruise	sta
			Mean	SD	Min	Max		Mean	SD	Min	Max		Mean	SD	Min	Max		
MA	May	3	.-	.-	.61	.65	-	.-	.-	7	10	-	.-	.-	.-	.-	DL8003	3
MA	May	7	.64	.015	.63	.66	-	.-	.-	-	-	-	.-	.-	.-	.-	DL8603	8
MA	Jun	10m	.61	.017	.59	.64	-	.-	.-	-	-	-	.-	.-	.-	.-	AL7906	3
MA in	Jun	20m	.64	.023	.59	.66	-	.-	.-	-	-	-	.-	.-	.-	.-	DL8604	124
MA	Jul	2m,1	.61	.-	.60	.63	-	.-	.-	7	10	-	.-	.-	.-	.-	EV8006	4
MA	Aug	4	.58	.013	.56	.59	-	.-	.-	-	-	-	.-	.-	.-	.-	BE7901	1
MA s	Aug	15	.57	.011	.54	.59	11	7.4	1.75	5	11	17	.06	.009	.05	.07	DL8708	3

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

**Unknown #99** Taxon Code: 100 000 099

Apr 1, 1993

Shape and size: Spherical; .62 (.59-.70)

Oil g: Multiple;  
no. per egg; (7-14)  
diameter; (.04-.08)

Egg membrane: Single, smooth, clear and colorless or with red tint.

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: GOM: Sep, Oct  
GB: May, Oct offshore  
SNE: Mar, Jun-Dec  
MAB: Mar, May, Jun, Aug-Nov  
SAB: Apr

Pigmentation and form:

# **MIDDLE**

**mid- & la-Mid:** No pigmentation.

# **LATE**

**5/8~:** No pigmentation.

**Full~:** "Light dorsal pigmentation" (old notes). Some fine dend melan in dors and anal finfolds.

Unknown #99, observed sizes

Apr 1, 1993

Summary: egg diameter: .62 (.59-.70)  
oil globule number per egg: (7-14)  
oil globule diam: (.04-.08)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
GB s off	Oct	1	.-	.-	.70	.70	1	.-	.-	7	7	-	.-	.-	.04	.06	AL8408	245
SN	Mar	1e	.-	.-	.62	.62	0	.-	.-	-	-	-	.-	.-	.-	.-	AL8101	128
MA s off	May	7	.62	.015	.59	.63	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8603	2
SA	Apr	3m	.66	.-	.65	.67	-	.-	.-	10	14	-	.-	.-	.06	.08	DL8503	139
SA	Apr	1	.-	.-	.69	.69	1	.-	.-	9	9	-	.-	.-	.05	.07	DL8503	142

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

*Trinectes maculatus* Taxon Code: 183 040 201

Apr 1, 1993

Shape and size: Spherical; (.70-.79)

Oil g: Multiple;  
no. per egg; (15-20)  
diameter; [no info]

Egg membrane: Single, smooth, clear and colorless

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: SNE: Aug  
MAB: Jul, Aug

Pigmentation and form:

[No information on this, yet.]

*Trinectes maculatus*, observed sizes

Apr 1, 1993

Summary: egg diameter: (.70-.79)  
oil globule number per egg: (15-20)  
oil globule diam: (no info)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SN	Aug	1e	.-	.-	.77	.77	-	.-	.-	20	20	-	.-	.-	.-	.-	BE7901	83
MA	Jul	7	.-	.-	.70	.79	-	.-	.-	15	20	-	.-	.-	.-	.-	EV8006	4

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

**Unknown #95** Taxon Code: 100 000 095

Apr 1, 1993

[tentative identification: *T. maculatus*]

Shape and size: Spherical; .74 (.72-.88)

Oil g: Multiple;  
no. per egg; (15-20)  
diameter; [no info]

Egg membrane: Single, smooth, clear and colorless.

Yolk: Homogeneous

Pv space:

Myomeres:

Spawning: GB: Sep  
SNE: Jul  
MAB: Jun-Sep

Pigmentation and form:

### MIDDLE

**la-Mid:** Punct melan on embryo, oil g and yolk. On embryo melan scatt dors and lat snout to tailtip; not lined up, not confined to lat aspects of h-brain, rather scatt all over it. Scatt over yolk but most dense post. Melan on oil g also.

### LATE

**7/8~:** Sparsely scatt melan on dorsum of embryo and on yolk, very dend.

Unknown #95, observed sizes

Apr 1, 1993

Summary: egg diameter: .74 (.72-.88)  
oil globule number per egg: (15-20)  
oil globule diam: [no info]

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SN	Jul	1m	.-	.-	.77	.77	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8406	6
MA s	Jun	1	.-	.-	.84	.84	-	.-	.-	15	20	0	.-	.-	.-	.-	AL7906	2
MA	Jun	10m	.74	.018	.72	.77	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8604	124
MA	Jul	3m	.-	.-	.82	.88	0	.-	.-	-	-	0	.-	.-	.-	.-	AL7906	49

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

Unknown #193 Taxon Code: 100 000 193

Apr 1, 1993

Shape and size: Spherical; (.77)

Oil g: Multiple;  
no. per egg; (approx 35)  
diameter; [no info]

Egg membrane:

Yolk:

Pv space:

Myomeres:

Spawning: SNE: Jul, offshore

Pigmentation and form:

### LATE

"No visible pigment on yolk" (old notes - destroyed in fire).

Unknown #193, observed sizes

Apr 1, 1993

Summary: egg diameter: (.77)  
oil globule number per egg: (approx 35)  
oil globule diam: [no info]

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SN off	Jul	1	.-	.-	.77	.77	0	.-	.-	-	-	0	.-	.-	.-	.-	EV8006	63

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.



**Unknown #186** Taxon Code: 100 000 186

Apr 1, 1993

Shape and size: Spherical; (.79)

Oil g: Multiple;  
no. per egg; [no information]  
diameter; [no information]

Egg membrane:

Yolk:

Pv space:

Myomeres:

Spawning: MAB: Sep

Pigmentation and form:

### LATE

"Lots of pigment on embryo" (old notes - destroyed in fire).

Unknown #186, observed sizes

Apr 1, 1993

Summary: egg diameter: (.79)  
oil globule number per egg: [no information]  
oil globule diam: [no information]

		Egg diameter					Oil globule no.					Oil globule diam						
Area	Mon	Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max	Cruise	sta
MA n off	Sep	1	.-	.-	.79	.79	0	.-	.-	-	-	0	.-	.-	.-	.-	AL8010	37

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

Unknown #227 Taxon Code: 100 000 227

Oct 3, 1994

Shape and size: Spherical; (0.93-0.96)

Oil g: Multiple;

no. per egg; (15-20)  
diameter; (.04-.07)

Egg membrane: Single, smooth, clear and steel gray in color.

Yolk: Homogeneous

Pv space:

Myomeres:

Spawning: SN: Sep, offshore  
MAB: Nov, south, offshore

Pigmentation and form:

# **LATE:**

7/8~: Only one melan observed; at 9/10 BL, on ventral edge of embryo.

Unknown #227, observed sizes

Oct 3, 1994

Summary: egg diameter: (0.93-0.96)  
oil globule number per egg: (15-20)  
oil globule diam: (.04-.07)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SN off	Sep	1	.-	.-	.93	.93	1	.-	.-	15	15	-	.-	.-	.04	.04	DL9110	184
MA s off	Nov	1e	.-	.-	.96	.96	1	.-	.-	18	20	-	.-	.-	.04	.07	DL8510	17

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

Shape and size: Spherical; .93-1.08 (.87-1.16)

Oil g: Multiple;  
no. per egg; 11-15 (6-25)  
diameter; .08-.13 (.04-.18)

Egg membrane: Single, smooth, clear and often red or copper tinted.

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: GB, SNE and MAB: Jun-Oct

Pigmentation and form:

**MIDDLE**

**ea-Mid:** A few faint dend melan scatt on dors, from mid-head (between eyes) to approx 1/3 or 1/2 BL; a couple on yolk adjacent to those melan just noted.

**LATE**

**5/8~:** Tail twisted and flexed. Dend melan (filmy in some) scatt on head; outline h-brain; then post scatt on dors and lat aspects; on post 1/4 body as relatively distinct and dark rows on dors and vent edges (outlining the tail); not in finfold. Melan on yolk, widely scatt, dend and hard to see; darkest (more contracted ?) on post-vent 1/2 yolk.

**3/4~:** Same as at 5/8~ except now scatt on h-brain (not just outline); and in dors and anal finfolds as loose patches at approx 3/4 BL. Extreme tailtip not as distinctly outlined (dors and vent) as at 5/8~, but the tail at between 3/5 and 4/5 BL is outlined; (tailtip seems to have outgrown the outlined area).

**15/16~:** Same filmy and dend melan on head and ant 1/2 body; dors and vent series outlining the 3rd 1/4 of body when viewed laterally; and post 1/4 is relatively clear of melan except for a couple of contracted melan at approx 9/10 BL (1 dors, 2 vent). Hind-gut outlined by melan; dors and anal finfold clusters of melan at approx 3/4 BL; dend, thread-like melan scatt on yolk and hard to see. None seem particularly associated with oil globules.

Summary: egg diameter: .93-1.08 (.87-1.16)  
oil globule number per egg: 11-15 (6-25)  
oil globule diam: .08-.13 (.04-.18)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
GB	Aug	10	1.05	.026	1.02	1.10	9	11.	.-	6	15	-	.-	.-	.04	.11	AL8507	413
MA n	Jun	10	1.08	.051	1.00	1.16	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8604	26
MA	Jul	9	1.01	.034	.96	1.06	4	.-	.-	10	22	-	.-	.-	.04	.10	AL8507	181
MA s	Jul	12	.96	.029	.90	1.00	5	15.	.-	11	23	-	.-	.-	.04	.13	AL8407	102
MA n	Aug	34	1.01	.032	.94	1.09	-	.-	.-	15	25	-	.-	.-	.04	.08	AL8507	218
MA s mid	Aug	15	.97	.026	.91	1.01	13	13.93	.48	8	20	17	.08	.014	.05	.11	DL8708	10
MA	Sep	10	.96	.039	.90	1.03	10	.-	.-	11	13	-	.10	.-	.07	.13	DL8507	38
MA	Sep	20	.93	.031	.87	.96	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8507	44
MA	Sep	10	.96	.021	.94	1.00	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8507	46
MA	Sep	10	.97	.033	.92	1.01	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8507	49
MA	Sep	10	.97	.023	.94	1.00	1	.-	.-	11	11	-	.-	.-	.07	.11	AL8605	63
MA	Sep	10	.96	.027	.92	1.00	1	.-	.-	12	12	-	.-	.-	.06	.09	AL8607	84
MA	Oct	10	.93	.031	.89	.98	5	12.61	.82	10	15	10	.13	.031	.09	.18	DL8608	124

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.  
<sup>2</sup>Refers to number of eggs in which oil globules were counted.  
<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

**Unknown #198** Taxon Code: 100 000 198

Apr 1, 1993

Shape and size: Spherical; 1.10 (1.10)  
 Oil g: Multiple;  
           no. per egg; (10)  
           diameter; (.06-.08)  
 Egg membrane: Internal scattered uniform pustules  
 Yolk: Homogeneous  
 Pv space: wide; approx .10-.15  
 Myomeres: ND  
 Spawning: MAB: May, Nov

Pigmentation and form:

# **LATE**

**5/8~:** Punct melan on embryo, yolk and ffold. On embryo sparsely scatt dorsally on head (1 over forebrain, then a few dors-lat over mid- and h-brain) then posteriad with tendency to be in 2 dors-lat rows to approx 3/4 BL with a few melan mid-dors; a few lat in pect area (1/3 BL); dors-lat rows seem to converge and end at approx 9/10 BL. Ventrally 4 or 5 on post 1/3 body. One melan in D ffold at approx 2/3 BL. Sparsely and widely scatt (approx 13-15 melan) on yolk.

Unknown #198, observed sizes

Apr 1, 1993

Summary: egg diameter: 1.10 (1.10)  
           oil globule number per egg: (10)  
           oil globule diam: (.06-.08)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
MA s	May	2	1.10.000	1.10	1.10		0	.-	.-	-	-	0	.-	.-	.-	.-	AL8403	10

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.  
<sup>2</sup>Refers to number of eggs in which oil globules were counted.  
<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

*Sarda sarda* Taxon Code: 170 440 701

Mar 31, 1993

Shape and size: Spherical; 1.19-1.26 (1.18-1.37)

Oil g: Multiple; [or perhaps single, and almost always broken]  
no. per egg; (2-10)  
diameter; (max=.27)

Egg membrane: Single, smooth, clear and colorless.

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: SNE: Jun-Aug  
MAB: May-Aug

Pigmentation and form:

### LATE

[Tiny, punct and sparse melan.]

*Sarda sarda*, observed sizes

Mar 31, 1993

Summary: egg diameter: 1.19-1.26 (1.18-1.37)  
oil globule number per egg: (2-10)  
oil globule diam: (max=.27)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SN	Jul	20	1.26	.030	1.21	1.30	-	.-	.-	2	10	0	.-	.-	.-	.-	AL7906	57
SN	Aug	4	1.19	.012	1.18	1.20	0	.-	.-	-	-	-	.-	.-	.-	.27	AL8507	218
MA	May	1	.-	.-	1.37	1.37	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8003	1

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

**Unknown #181** Taxon Code: 100 000 181

Apr 1, 1993

Shape and size: Spherical; (1.45-1.49)

Oil g: Multiple;  
no. per egg; [no info]  
diameter; [no info]

Egg membrane:

Yolk:

Pv space:

Myomeres:

Spawning: MAB: May, Sep

Pigmentation and form:

[No information on this, yet.]

Unknown #181, observed sizes

Apr 1, 1993

Summary: egg diameter: (1.45-1.49)  
oil globule number per egg: [no info]  
oil globule diam: [no info]

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
MA s	May	1	.-	.-	1.45	1.49	0	.-	.-	-	-	0	.-	.-	.-	.-	DL8003	3

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.

Unknown #213 Taxon Code: 100 000 213

Apr 1, 1993

[tentative identification: Soleidae]

Shape and size: Spherical; 1.47 (1.42-1.52)

Oil g: Multiple;  
no. per egg; (10-15)  
diameter; (.10-.15)

Egg membrane: Single, smooth, clear and colorless.

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres: approx 30

Spawning: SAB: Apr offshore

Pigmentation and form:

#### LATE

**Full-:** Heavily pigmented embryo, finfold and yolk (not sure if oil g is pigm or not, yolk pigm obscures any if there). Dark melan all over head (but eyes weakly pigm), all over yolk membrane, including pect buds emphasized, void area on dors and lat of abdomen and void posterior 1/6 of body, otherwise heavy into finfold above abdomen and on body and into dors and anal finfolds in broad and striking band at about 2/3 BL.

Unknown #213, observed sizes

Apr 1, 1993

Summary: egg diameter: 1.47 (1.42-1.52)  
oil globule number per egg: (10-15)  
oil globule diam: (.10-.15)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
SA off	Apr	2	1.47	0.071	1.42	1.52	-	.-	.-	10	15	-	.-	.-	.10	.15	DL8503	136

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.



Unknown #86 Taxon Code: 100 000 086

Apr 1, 1993

Shape and size: Spherical; (2.70)

Oil g: Multiple;  
no. per egg; [no info]  
diameter; (approx .05)

Egg membrane:

Yolk:

Pv space:

Myomeres:

Spawning: MAB: Aug, offshore

Pigmentation and form:

**LATE:**

The only information we have now is that there is no pigment (at some indefinite late stage).

Unknown #86, observed sizes

Apr 1, 1993

Summary: egg diameter: (2.70)  
oil globule number per egg: [no information]  
oil globule diam: (approx .05)

Area	Mon	Egg diameter					Oil globule no.					Oil globule diam					Cruise	sta
		Obs <sup>1</sup>	Mean	SD	Min	Max	Obs <sup>2</sup>	Mean	SD	Min	Max	Obs <sup>3</sup>	Mean	SD	Min	Max		
MA off	Aug	1	.-	.-	2.70	2.70	0	.-	.-	-	-	-	.-	.-	.05	.05	BE7901	17

<sup>1</sup>Refers to number of late-stage eggs unless noted otherwise.

<sup>2</sup>Refers to number of eggs in which oil globules were counted.

<sup>3</sup>Refers to number of oil globules measured, in 1 or more eggs.